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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,036	02/15/2002	Michael Andrew Parker	SJO919990205US1	1965
7590 05/06/2004			EXAMINER	
DAVID W. LYNCH CRAWFORD MAUNU PLLC 1270 NORTHLAND DRIVE SUITE 390 MENDOTA HEIGHTS, MN 55120			JOHNSTON, PHILLIP A	
			ART UNIT	PAPER NUMBER
			2881	
DATE MAILED: 05/06/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/077,036	<b>Applicant(s)</b> PARKER ET AL.	
	<b>Examiner</b> Phillip A Johnston	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 70-147 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 70-147 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Detailed Action***

1. This Office Action is submitted in response to RCE / Amendment dated 3-23-2004, wherein claims 1-69 are cancelled. New Claims 70-147 have been added. Claims 70-147 are pending.

***Claims Rejection – 35 U.S.C. 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 70-88, 105-127, and 145-147 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Pub. No. 2002/0059047 to Haaland, in view of Obremski, U.S. Patent No. 5,498,875.

Regarding Claims 70-73, Haaland (047) discloses an algorithm for predicting analyte concentration that accommodates system spectral drift that includes;

(a) A method of multivariate spectral analysis of repeat (sequential) sample spectra, where the repeat spectral shapes are transformed into a matrix of row vectors from which time dependent (an independent variable, as recited in claims 70, 73, and

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145) spectrometer drift spectral data are subtracted, resulting in a drift compensated matrix; i.e., compensated for the effects of drift as related to the independent variable time, as recited in Claim 70. See paragraph [0026].

(b) Performing a factor analysis that includes eigen vector analysis of mean centered temporal drift spectra, resulting in a set of principal factors, compensated for the effects of drift as related to the independent variable time, as recited in claims 70, and 145. See paragraphs [0004] and [0031].

(c) Generating a prediction curve from matrixed spectral shape data (profile trajectories) that has been compensated for the temporal spectral drift of the spectrometer, as recited in claims 70 and 145. See paragraph [0066] and Figure 12.

Regarding Claims 105-109, 111, and 112, Haaland (047) also discloses the use of a Nicolet 800 Fourier Transform spectrometer. See paragraph [0048]. Haaland (047) further discloses that the algorithm can be applied to other types of spectroscopy, as recited in claims 106-109. See paragraph [0027].

Haaland (047) as applied above fails to teach the use of software (programs of instructions executable by a computer), as recited in claims 145-147. However, Obremski (875) discloses a number of available spectral analysis software packages. See Column 10, line 5-19.

Therefore it would have been obvious to one of ordinary skill in the art that the multivariate spectral analysis apparatus and method of Haaland (047) can be modified to use the software packages of Obremski (875), to provide the ability to process

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arrays and vectors representative of the data, resulting in the quantitative measurement of properties of unknown samples.

The combination of Haaland (047) in view of Obremski (875) discloses the claimed invention except for the spectral analytical techniques recited in Claims 74-88, 110, and 113-127. However Obremski (875) teaches in Column 10, line 5-19 that spectral analysis procedures are well known, and are described, for example, in Factor Analysis & Chemistry by Malinowski and Howery (Wiley-Interscience 1980) as does Haaland (047) in paragraphs [0004] and [0042].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the spectral analysis procedures as taught by Obremski (875) and Haaland (047), and that such modification would provide the ability to process arrays and vectors representative of the spectral data, as recited in claims 74-88, 110, and 113-127.

4. Claims 89-104, and 128-144 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Pub. No. 2002/0059047 to Haaland, in view of Obremski, U.S. Patent No. 5,498,875, and in further view of Ito, U.S. Patent No. 6,393,368.

Haaland (047) in view of Obremski (875) as applied above fails to teach the use of phase shift analysis in waveform processing, as recited in claims 145-147. However, Ito (368) discloses waveform factor analysis along the time axis. See Column 2, line 47-65; and Column 4, line 58-65.

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Therefore it would have been obvious to one of ordinary skill in the art that the multivariate spectral analysis apparatus and method of Haaland (047) in view of Obremski (875) can be modified to use the waveform factor analysis apparatus and method of Ito (368), to provide methods and apparatuses for analyzing spectra and to provide information useful in analyzing the components of a sample.


### **Conclusion**

5. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor John Lee can be reached at (571) 272-2477. The fax phone numbers are (703) 872-9318 for regular response activity, and (703) 872-9319 for after-final responses. In addition the customer service fax number is (703) 872- 9317.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

PJ

April 22, 2004



JOHN R. LEE  
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